

## REMARKS

1. Amendment Under Rule 116:

This proposed amendment has been prepared under Rule 116 to place the application in condition for allowance or at least in improved condition for appeal. Accordingly, applicant respectfully requests the Examiner to enter this proposed amendment.

2. Submission of Redrafted Drawings Showing Figure 1-7:

Applicant is enclosing redrafted drawings constituting Figures 1-7. These drawings have been prepared by a patent draftsman to meet the rules of the USPTO. Figure 4 conforms to the penciled version of Figure 4 included with the amendment filed by applicant on February 4, 2003. Applicant respectfully requests the Examiner to accept Figures 1-7 in the form included with this amendment.

3. The Allowability of the Claims in the Patent Application:

Claims 1-97 have been retained in this application, many of them in at least somewhat amended form. Claims 84 and 95 have been amended in accordance with the objections of the Examiner. Applicant has amended other claims to correct informalities noted by applicant's attorney upon a further study of the claims. As now written, all of the claims are believe to be definite.

Most, if not all, of the claims in the application relate to the transmitter embodiment shown in Figure 3 and to the receiver embodiments shown in the subsequent Figures and operating with to the transmitter embodiment shown in Figure 3. As now written, the claims are distinguished patentably over Tanaka alone, Tanaka in combination with Fulghum, Tanaka in combination with Park, Park in combination with Tanaka, Tanaka in combination with Lee,

Tanaka in combination with Lee and Park, Tanaka in combination with Lee and Fulghum and Tanaka in combination with Lee, Fulghum and Park.

i. Tanaka patent 5,781,542

In contrast to applicant's invention, Tanaka shows in Figure 2 and discloses in column 2, lines 21-40 and column 4, lines 5-27 of the specification that all of the sections 131-13m combine the signals with data modulations and spreading codes and introduce these combined signals to the radio transmission section 14. The controller 20 in Tanaka does not select one of the data modulations in each data modulation sequence and one of the spreading codes in each spreading code sequence in the system shown in Figure 2. This may be seen from the discussion in column 5, lines 7-12 of Tanaka. If the Examiner still believes that Tanaka selects one of the data modulations in each data modulation sequence and one of the spreading codes in each spreading code sequence, applicant would appreciate if the Examiner would specify the column and line where Tanaka discloses this.

Furthermore, the data modulations are provided serially with the spread codes in Tanaka as may be seen from the disposition of the modulation section 12 between the sections 111-11m and the sections 131-13m. It may also be seen from the discussion by Tanaka in column 6, lines 61-65 of Tanaka. In addition, the output of the sections 131-13m in Tanaka does not constitute a multiplication product of data modulations and spreading codes.

Tanaka also does not disclose a receiver which operates in the same manner as applicant's receiver. For example, Tanaka does not disclose the features specified hereafter in subsections 4f-4m.

Applicant respectfully invites the Examiner to specify by column and line (not by paragraph) in the Tanaka specification where Tanaka discloses the selection of one of the data modulations in each of the data modulation sequences and the selection of one of the spreading codes in each of the spreading code sequences. Applicant would also appreciate it if the Examiner would specify by column and line where Tanaka discloses the combination of the selected one of the data modulations in each data modulation sequence and the selected one of the spreading codes in each spreading code sequence.

ii. Fulghum patent 5,345,469

Fulghum discloses only spreading codes. Fulghum does not disclose data modulations. Fulghum does not disclose a selection of one of the spreading codes in a spreading code sequence. In view of the above, Fulghum does not disclose the selection of one of M data modulations in a data modulation sequence and one of N spreading codes in a spreading code sequence. Fulghum also does disclose the combination (as by multiplication) of the selected one of the data modulations in the data modulation sequence and the selected one of the spreading codes in the spreading code sequence. Since Tanaka and Fulghum do not disclose the steps of selecting one of a plurality of M data modulations in each successive sequence of data modulations and one of N spreading codes in each successive sequence of spreading codes, Fulghum cannot be combined with Tanaka to reject applicant's claims.

Since neither Tanaka nor Fulghum discloses applicant's transmitting system, neither Tanaka nor Fulghum discloses applicant's receiving system. For example, neither Tanaka nor Fulghum discloses a system for recovering the selected one of the M data modulations in each data modulation sequence and the selected one of the N spreading

codes in each spreading code sequence from the combination of the selected one of M data modulations each data modulation sequence and the selected one of the spreading codes in the spreading code sequence.

iii. Park Patent 6,160,840

Park does not disclose a system (a) providing a plurality of data modulations in each data modulation sequence and a plurality of spreading codes in each spreading code sequence, (b) selecting an individual one of the data modulations in each data modulation sequence and an individual one of the spreading codes in each spreading code sequence and (c) combining the selected one of the data modulations in each data modulation sequence and the selected one of the spreading codes in each spreading code sequence. Park discloses only spreading code sequences but does not disclose the selection of only one of the spreading codes in each spreading code sequence. This is consistent with the following statement by the Examiner in paragraph 9 on page 11 of the Office Action dated 03/26/2004:

"Park does not disclose modulating the interleaved data then spreading the signal prior to transmission."

Since Tanaka and Park do not disclose the steps of selecting one of a plurality of M data modulations in each successive sequence of data modulations and one of the N spreading codes in each successive sequence of spreading codes, Park cannot be combined with Tanaka to reject applicant's claims.

Since neither Tanaka nor Park discloses applicant's transmitting system, neither Tanaka nor Park discloses applicant's receiving system. For example, neither Tanaka nor Park discloses a system for recovering the selected one of the M data modulations in each

data modulating system and the selected one of the N spreading codes in each spreading code sequence from the different combinations of the individual ones of the data modulations in each data modulation sequence and the selected ones of the N spreading codes in each spreading code sequence.

iv. Lee Patent 6,111,868

According to the Examiner, Lee discloses a plurality of matched filters. However, Lee does not disclose a plurality of M data modulations in successive sequences of data modulations and a plurality of N spreading codes in successive sequences of spreading codes. Lee also does not disclose a combination of the selected one of the M data modulations in each successive data modulation sequence and the selected one of the N spreading codes in each successive spreading code sequence. Tanaka also does not disclose these features. Tanaka and Lee cannot accordingly be combined to reject applicant's claims.

4. Patentable Distinctions Between Applicant's Invention as Claimed and the Prior Art Cited by the Examiner.

a. In applicant's Figure 3, a system is provided in which M data modulations are provided in a data modulation sequence and N spreading codes are provided immediately thereafter in a spreading code sequence. These sequences of M data modulations and N spreading codes are provided on a reiterative basis. One of the M data modulations in each data modulation sequence and one of the N spreading codes in each spreading code sequence are then selected and paired in a parallel relationship. The selected data modulation and the selected spreading code are combined as by a multiplication product of the selected data modulation and the selected spreading code.

The steps described above are repeated for each successive sequence of the M data modulations and each successive sequence of the N spreading codes.

None of the Tanaka, Fulghum, Park and Lee discloses the method disclosed in the previous paragraph. Because of this, no combination of the prior art references can be cited to reject the claims reciting the method.

Many of the claims as now written are additionally allowable over the cited references, whether used individually or in combination, for other reasons of some importance. These include the following:

b. None of the references, including Tanaka, discloses that the selected one of the M data modulations in each data modulation sequence and the selected one of the N spreading codes in each spreading code sequence are presented in parallel. For example, the data modulations from the sections 11i-11m in Tanaka are presented in series through the modulation section 12 with the presentation of spreading codes from the sections 13i-13m. This may be seen from the spreading code sections 13i-13m. In Figure 2 in Tanaka where the sections 11i-11m are in series with the modulation section 12 which is in series with the spreading code sections 13i-13m.

c. None of the cited references discloses that the selected data modulation in each data modulation sequence is combined with the selected spreading code in the juxtaposed spreading code sequence.

d. None of the cited references discloses that the selected data modulation in each data modulation sequence is multiplied by the selected spreading code in each spreading code sequence.

e. None of the cited references discloses the step of transmitting to a receiver the combination of the selected one of the M data modulations in each data modulation sequence and the selected one of the N spreading codes in the juxtaposed spreading code sequence.

f. None of the cited references discloses the step of providing at the receiver the combination, or multiplication product, of a selected one of the M data modulations in each data modulation sequence and the selected one of the N spreading codes in the juxtaposed spreading code sequence and identifying at the receiver the combination received at the receiver of the selected one of the M data modulations in each data modulation sequence and the selected one of the N spreading codes in the juxtaposed spreading code sequence.

g. None of the cited references discloses that each combination of the selected one of the M data modulations in each data modulation sequence and the selected one of the N spreading codes in the juxtaposed spreading code sequence is passed through each individual one of a plurality of matching filters. Each of the matching filters has characteristics to identify the characteristics of the combination of an individual one of the M data modulations in each data modulation sequence and an individual one of the N spreading code in the juxtaposed spreading code sequence.

h. None of the references discloses the steps of (a) receiving at a receiver signals transmitted from the transmitter and constituting a combination of a selected one of the M data modulations in each data modulation sequence and a selected one of the N spreading codes in the juxtaposed spread code sequence and (b) identifying, from the different combinations of the M data modulations in each data modulation sequence and the N

spreading codes in the juxtaposed N spread code sequence, the combination of the selected one of the M data modulations in each data modulation sequence and the selected one of the N spreading codes in the juxtaposed spreading code sequence.

i. None of the cited references discloses that correlation techniques are used to identify, from the combinations of the M data modulations in each data modulation sequence and the N spreading codes in the juxtaposed spreading code sequence, the combination of the selected one of the M data modulations in the data modulation sequence and the selected one of the N spreading codes in the juxtaposed spreading code sequence.

j. None of the cited references discloses that matched filter techniques are used to identify, from the combinations of the M data modulations in each data modulation sequence and the N spreading codes in the juxtaposed spreading code sequence, the combination of the selected one of the M data modulations in each data modulation sequence and the selected one of the N spreading codes in the juxtaposed spreading code sequence.

k. None of the cited references discloses that the (i) received data is multiplied by each individual one of the N spreading codes in the correlation techniques, (ii) that the individual ones of the products are integrated with time, (iii) that the individual ones of the integrated products are squared and (iv) that the combination of the selected one of the M data modulations in each data modulation sequence and the selected one of the N spreading codes in the juxtaposed spreading code sequence is identified by the highest value in the plurality of the integrated products.



l. None of the cited references discloses that the data modulations in each data modulation sequence and the spreading codes in the juxtaposed spreading code sequence are provided in accordance with instructions from the receiver.

m. None of the cited references discloses the steps of (i) providing input signals with reiterative sequences of M data modulations, (ii) selecting each individual one of the M data modulations in each reiterative data modulation sequence and combining each individual one of the M data modulations in each reiterative sequence with a spreading code.

5. Patentable Distinctions Between Each of Applicant's Claims and the Prior Art Cited by the Examiner.

Claims 1-18, 21, 29-34, 43, 44, 47, 49, 51, 54-57, 59, 75-79, 84-90 and 95-97 have been rejected under 35 U.S.C. 102(a) as being anticipated by Tanaka. Claims 19, 20, 22-24, 80-83, 91 and 92 have been rejected under 35 U.S.C. 103(a) as being unpatentable under 35 U.S.C. 103(a) as being unpatentable over Tanaka in view of Fulghum. Claims 25-28, 41, 42, 93 and 94 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Park in view of Tanaka. Claims 35-40, 45, 46, 50, 52, 53, 58, 60 and 67 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka in view of Park. Claims 61-63 and 66 have been rejected under 35 U.S.C. (103(a) as being unpatentable over Tanaka in view of Lee. Claims 64 and 65 have been rejected under over Tanaka in view of Lee and further in view of Park. Claims 68-70 and 73 have been unpatentable over Tanaka in view of Lee and further in view of Fulghum. Claims 71, 72 and 74 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka in view of Fulghum and further in view of Park.

Applicant is presenting below an analysis of each of claims 1-97 to show how each claim is distinguished patentably over Tanaka, Fulghum, Park and Lee whether the references are used individually or in combination. Applicant has provided this analysis with reference to the patentable distinctions specified in subsections 4a-4m.

Claim 1:

Subsections 4a, 4b and 4c.

Claim 2:

Dependent from allowable claim 1

Subsection 4(c)

Claim 3:

Dependent from allowable claim 2

Subsection 4(c)

Claim 4:

Dependent from allowable claim 3

Claim 5:

Dependent from allowable claim 2

Subsection 4(d)

Claim 6:

Subsection 4a

Claim 7:

Dependent from allowable claim 6

Subsection 4c

Claim 8:

Dependent from allowable claim 6

Subsection 4d

Claim 9:

Dependent from allowable claim 6

Subsections 4b, 4c

Claim 10:

Dependent from allowable claim 9

Subsections 4a, 4e

Claim 11:

Dependent from allowable claim 10

Claim 12:

Subsections 4a, 4c, 4e

Claim 13:

Dependent from allowable claim 12

Subsection 4b

Claim 14:

Subsections 4a, 4c

Claim 15:

Dependent from allowable claim 14

Subsection 4e

Claim 16:

Dependent from allowable claim 14

Subsection 4f

Claim 17:

Dependent from allowable claim 16

Claim 18:

Dependent from allowable claim 16

Claim 19:

Dependent from allowable claim 16

Subsection 4i

Claim 20:

Dependent from allowable claim 18

Subsection 4j

Claim 21:

Subsection 4h

Claim 22:

Dependent from allowable claim 21

Subsection 4i

Claim 23:

Dependent from allowable claim 21

Subsection 4j

Claim 24:

Dependent from allowable claim 22

Subsection 4k

Claim 25:

Subsections 4a, 4c, 4e

Claim 26:

Dependent from allowable claim 25

Subsections 4a, 4c, 4e

Claim 27:

Dependent from allowable claim 26

Subsections 4b, 4d

Claim 28:

Dependent from allowable claim 27

Subsection 4b

Claim 29:

Subsections 4a, 4b, 4d, 4e

Claim 30:

Dependent from allowable claim 29

Subsection 4f

Claim 31:

Dependent from allowable claim 30

Claim 32:

Dependent from allowable claim 30

Claim 33:

Dependent from allowable claim 29

Claim 34:

Dependent from allowable claim 30

Claim 35:

Dependent from allowable claim 29

Claim 36:

Dependent from allowable claim 29

Claim 37:

Dependent from allowable claim 30

Claim 38:

Dependent from allowable claim 29

Claim 39:

Dependent from allowable claim 30

Claim 40:

Dependent from allowable claim 30

Claim 41:

Subsection 4f

Claim 42:

Dependent from allowable claim 41

Subsection 4f

Claim 43:

Subsections 4a, 4b, 4d, 4e

Claim 44:

Dependent from allowable claim 43

Claim 45:

Dependent from allowable claim 43

Claim 46:

Dependent from allowable claim 43

Claim 47:

Dependent from allowable claim 43

Subsection 4l

Claim 48:

Dependent from allowable claim 43

Claim 49:

Dependent from allowable claim 43

Claim 50:

Dependent from allowable claim 44

Subsection 4l

Claim 51:

Subsection 4e

Claim 52:

Subsections 4a, 4c, 4e, 4l

Claim 53:

Dependent from allowable claim 52

Claim 54:

Dependent from allowable claim 51

Claim 55:

Subsections 4a, 4b, 4c

Claim 56:

Dependent from allowable claim 55

Subsections 4d, 4l

Claim 57:

Dependent from allowable claim 55

Subsection 4e

Claim 58:

Dependent from allowable claim 55

Claim 59:

Dependent from allowable claim 55

Claim 60:

Dependent from allowable claim 56

Subsection 4k

Claim 61:

Subsections 4c, 4g

Claim 62:

Dependent from allowable claim 61

Claim 63:

Dependent from allowable claim 61



Claim 64:

Dependent from allowable claim 61

Claim 65:

Dependent from allowable claim 65

Claim 66:

Dependent from allowable claim 61

Claim 67:

Dependent from allowable claim 84

Subsection 4k

Claim 68:

Subsection 4l

Claim 69:

Dependent from allowable claim 68

Claim 70:

Dependent from allowable claim 68

Claim 71:

Dependent from allowable claim 68

Claim 72:

Dependent from allowable claim 68

Claim 73:

Dependent from allowable claim 68

Claim 74:

Dependent from allowable claim 69

Subsection 4l

Claim 75:

Dependent from allowable claim 14

Subsection 4d

Claim 76:

Dependent from allowable claim 12

Subsection 4d

Claim 77:

Dependent from allowable claim 13

Subsection 4d

Claim 78:

Dependent from allowable claim 14

Subsections 4b, 4d

Claim 79:

Dependent from allowable claim 78

Subsection 4e

Claim 80:

Dependent from allowable claim 79

Subsection 4i

Claim 81:

Dependent from allowable claim 21

Subsection 4d

Claim 82:

Dependent from allowable claim 81

Subsections 4c, 4k

Claim 83:

Dependent from allowable claim 80

Subsection 4d

Claim 84:

Subsections 4b, 4c

Claim 85:

Dependent from allowable claim 84

Subsection 4d

Claim 86:

Dependent from allowable claim 85

Subsection 4d

Claim 87:

Subsection 4n

Claim 88:

Dependent from allowable claim 87

Subsection 4d

Claim 89:

Dependent from allowable claim 88

Subsections 4b, 4d

Claim 90:

Subsections 4c, 4f

Claim 91:

Dependent from allowable claim 90

Subsection 4i

Claim 92:

Dependent from allowable claim 90

Subsection 4j

Claim 93:

Subsections 4a, 4c, 4e, 4l

Claim 94:

Dependent from allowable claim 93

Subsection 4d

Claim 95:

Subsections 4a, 4b, 4c, 4e, 4l

Claim 96:

Dependent from allowable claim 95

Subsection 4d

Claim 97:

Dependent from allowable claim 95

Subsection 4f

6. Inapplicability of Combining Prior Art References

In order for different prior art references to be combined to reject a claim, the references have to disclose or suggest the combination recited in the claim *ACS Hospitality systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 221 USPQ 929 (Fed.Cir. 1984). As the Federal Circuit indicated in the ACS case at 732 F.2d. 1577, 1579, 221 USPQ 929, 933:

"Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching or suggestion supporting the combination. Under Section 103, teaching of references can be combined only if there is some suggestion or incentive to do so."

None of Tanaka, Fulghum, Park and Lee cited by the Examiner to reject the claims in this application discloses or suggests a number of important features recited in the claims. The references cannot accordingly be combined to reject the claims.

7. Conclusion

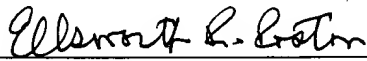
As will be seen from the discussion above, none of the cited prior art references discloses a number of important features of applicant's invention. This is true even though the Examiner has cited as many as three (3) references in combination against some of the claims and even as many as four (4) references in combination against other claims.

In view of the above, reconsideration and allowance of the application are respectfully requested.

The Commissioner is authorized to charge any deficiencies in fees or credit any overpayments to our Deposit Account No. 06-2425.

Respectfully submitted,

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